

Research on urbanization of middle and south Hebei from the perspective of high mobility

Anqi Yang^{1,3}, Miaomeng Tan²

¹Beijing City University, Beijing

²China Academy of Urban Planning and Design, Beijing

³Yaq15@tsinghua.org.cn

Abstract. With collaborative development of Beijing-Tianjin-Hebei region, we work on studying the history, culture, industrial system of the middle and south areas of Hebei, and sorted out the characteristics of their urbanization development. It has showed that there are so many wonderful rural enterprises with the prosperous rural economy, but being lower level of urbanization developing in above areas. Most of farmers have to work in both towns and farms at different time. As result, it caused serious environmental problems for lack of the proper mode of urbanization. The farmers from these poor areas will face more challenges for surviving and improving their lives. It is supposed that the future development of urbanization will promote reasonable population and rural industries gathering from large cities to towns. At the same time, the clean energy and renewable resources should be further developed and used to avoid the continuous global environmental pollution and climatic deterioration. What the government and industrial planning departments need to do will be to build the platform of information industry for villages and towns, to promote resources to be integrated effectively and the industry upgrading fully. Therefore, the problems about development of urbanization will be solved gradually.

Keywords: Collaborative development of Beijing, Tianjin and Hebei, Regional planning, High mobility, Urbanization.

1. Introduction

The middle and south areas of Hebei (MSH) should have been developing rapidly because they are located in somewhere close to Beijing and Tianjin with more convenient transportation easily to extend everywhere in all directions from mountains to vast plains. What's more, it is proposed that the decentralization of non-capital functions of Beijing and Tianjin provides the potential opportunities and conditions for its fast developing. However, from the current level of economic development, the process of urbanization in MSH does not develop very well for lack of enough internal driving force even if per capita GDP is not lower than other areas round Hebei. In this paper, we focus on researching and discussing about above special problems. By studying the history, culture, industrial system of MSH, we summarized and sorted out the developmental mode and characteristics of the counties and towns, the aim to provide some beneficial references for promoting the development of world-class urban agglomeration with the coordinated development of Beijing-Tianjin-Hebei region.

2. Regional status and development characteristics

2.1. Basic introduction

From administrative division, as a part of Hebei, MSH area includes seven cities, such as Baoding, Shijiazhuang, Xingtai, Handan, Cangzhou, Hengshui and Langfang. The total land area of them about 90,000 km², occupying about 40%, permanent population about 52.86 million, accounting for 47% and GDP accounts for 38% of the entire Beijing-Tianjin-Hebei region. Therefore, it is supposed that this area might be the most densely populated in Hebei Province with nearly 50% of the land area and 2/3 of the population of the whole province (See Figure 1).

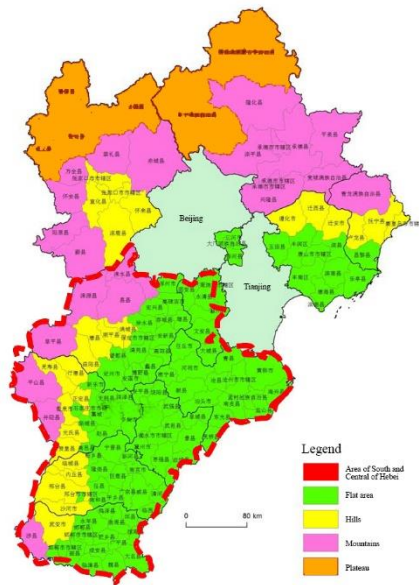


Figure 1. The geographical location of south and Central of Hebei (Left, From author)

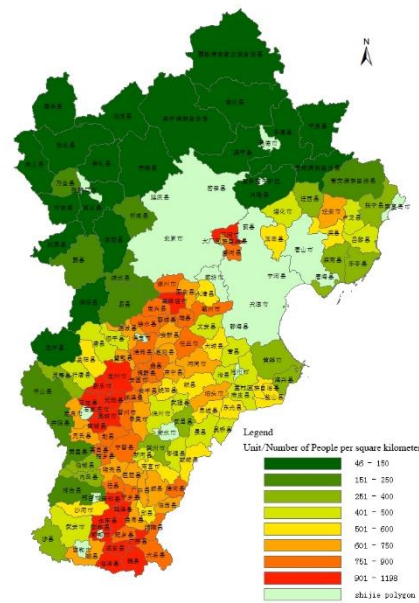


Figure 2. Map of population density in 2023 (Right, From author)

2.2. Regional status cognition

As we know, this area is very important in Beijing-Tianjin-Hebei region. First of all, it has a large of arable lands, and belongs to the main agricultural production area in the Huang-Huai-hai Plain, so become a significant agricultural production region in China as well. Secondly, it is the most densely populated area that the highest population density reaches 4-10 times that of the north Hebei. In addition, it is also an area with traditional Chinese culture, customs and densely preserved heritages in the Beijing-Tianjin-Hebei region. It contains the traditional Taihang Mountain front cultural area of the North China Plain, which has also left heavily historical heritages and become a prominent representative of the historical and cultural characteristics of Hebei. (See Figure 2)

2.3. Development status characteristics

As analysis and statistic, one of the economic developing characteristics of MSH is that the secondary industries developed very well. Compared with the northern area of Hebei and the Beijing-Tianjin region, there is a large proportion of the secondary industries in Hebei, as well as they have the very important position in industrial structure of each county and even county economy. (See Figure 3, Figure 4)

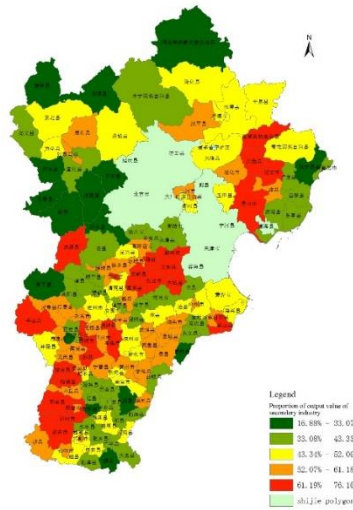


Figure 3. The proportion of secondary production of each county of Hebei Province in 2022(Left, From author, Data from *Hebei statistical yearbook*)

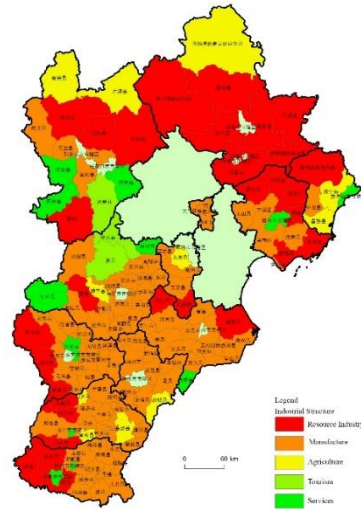


Figure 4. The type of industrial structure of Hebei in 2022 (Right, From author, Data from *Hebei statistical yearbook*)

3. Analysis on the characteristics of county urbanization in South Hebei Province from the perspective of traffic analysis

3.1. Low level of urbanization

Compared with Beijing-Tianjin region, in general, the level of urbanization in MSH is lower with the low-end and flat feature. It shows that the economy developed slowly in large and medium-sized cities, but faster in the towns. The reason of why the large and medium-sized cities developing not well might be affected by Beijing and Tianjin, resulting in limited urban population size and economic aggregate. On the other hand, with a large amount of the plain and fertile land, the unique natural conditions promote agricultural production and industrial development. Therefore, the economy of counties, towns, and villages has been developed more faster than large and medium-sized cities, population increasing as well. However, compared with the more mature urban agglomerations in the coastal areas such as the Yangtze River Delta and the Pearl River Delta, there is a difference between them in economic development and the level and quality of urbanization. It is supposed that the economy of above areas grows differently from fast to slow, that is, from the Yangtze River Delta and Pearl River Delta, towns to large and medium-sized cities (See Figure 5).

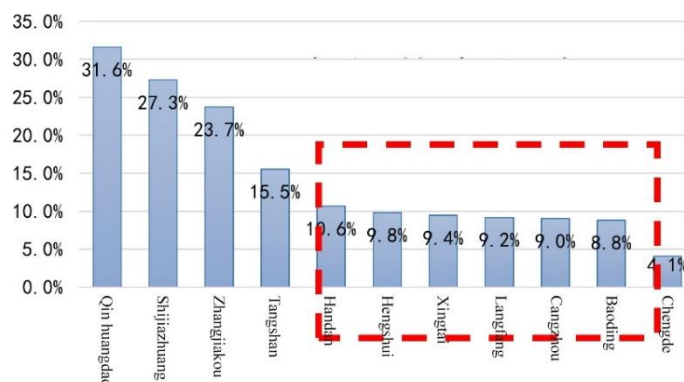


Figure 5. The added value proportion of secondary production of Hebei province (From author, Data from *Territorial spatial planning of Hebei*)

3.2. Characteristics of working in urban and rural areas by the support of motor vehicles.

3.2.1. The urbanization mode of working in urban and rural of MSH. According to statistic data, in China, the number of motor vehicles of Hebei ranks among the top. In recent years, the government has invested so much money in the construction of infrastructure in villages and towns of MSH that the dense road network, including the town highways, national highways and provincial highways, have been extended to everywhere in Great Plain area of MSH. The connection of highways promotes the rapid flow of people within the region, which also provides the convenient commute for farmers to work in different cities of the Beijing-Tianjin-Hebei region. (See Figure 6, Figure 7). The off-farm workers can go far away to different places for work freely by trains or buses from small villages to towns, counties, even cities. The data indicated that the commuting proportion of Hebei farmers occupied about 60%-90% just in one day. In addition, the price of urban commercial houses continues to rise rapidly in Beijing- Tianjin-Hebei region, taking Shijiazhuang as an example, from 8600 Yuan/m² in 2015 to about 14,000 Yuan/m² at the end of 2016 (Soufun statistics).The farmers do not want to give up their opportunities of jobs. So they have to work in the industrial clusters but live in their own houses in the villages because they were forced by the pressure of high housing prices.

3.2.2. Engaged in two jobs at towns and farms. As we know, compared with the poor soil in the coastal areas, MSH belongs to the traditional agricultural area with a large amount of the plain and fertile land, for which the unique natural conditions promote agricultural production effectively and increase the income of farmers. At the same time, as the industries of villages and towns have been developing very well, most of farmers have more opportunities to go out to the different places for making more money to feed their families. This is the reason why it has formed the typical mode for farmers of MSH to work at both of farms and towns (See Table 1).

3.3. The rough mode of urbanization with the environmental risks

3.3.1. Low level, small-scale and scattered industries with lower profit. The characteristics of the rural enterprises are small-scale with low technological content for their scattered distribution even if growing so fast. As it was reported, lack of necessary technological content to win the intensive competition, these enterprises have been obtain more and more lower and even decreasing profits and rate of returns although they have a larger market share of products. For example, Hengshui Anping Wire Mesh, as a well-known and the pillar industry of the county in MSH, the product price has been lower because the industrial technological content is not enough, in the contrast, while the product price of German stainless steel mesh is about 6-10 times higher than that of Hengshui Anping Wire Mesh.

3.3.2. Occupying lands illegally is serious. For recent years, the rural areas of MSH have become the main areas for occupying land illegally. Without doubt, the industrial of villages and towns occupy the largest part of lands illegally among them. In addition, most of industrial lands located at some areas out of urban planning, not controlled by the supervision of urban planning, and lack of effective legal channels for land supply, farmers of each village hope to occupy more lands for farming almost on everywhere, from scattered lands along the villages side to roadside for making more money. Considering the lower level of agricultural production, it is not possible to equip necessary facilities for protecting natural environments.

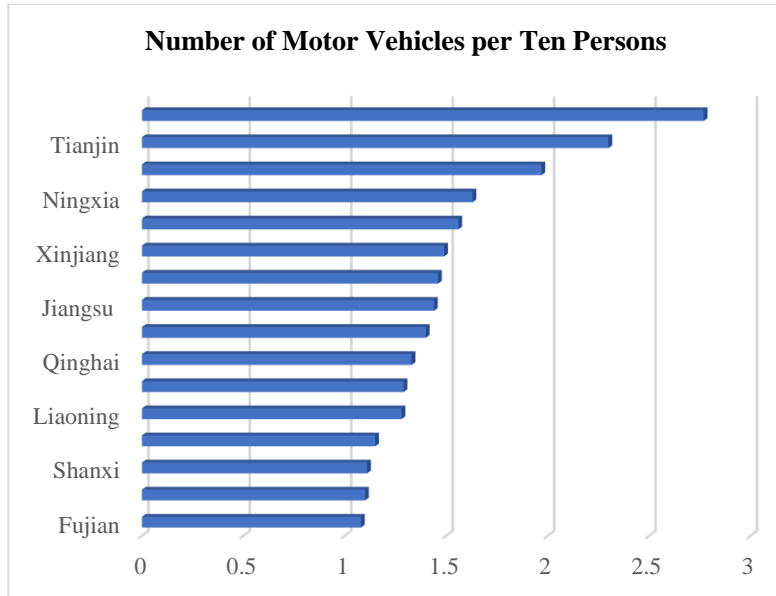


Figure 6. Number of motor vehicles in each provinces of PRC (From author, Data from *Territorial spatial planning of Hebei*)

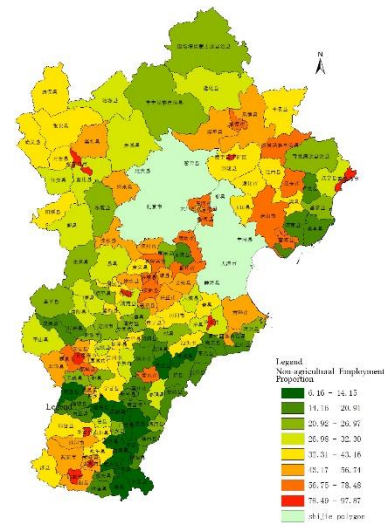


Figure 7. The proportion of Non-agricultural Employment in Hebei (From author, Data from *Hebei statistical yearbook*)

Tabel 1. Rural household income composition of South and Central of Hebei (From author, Data from *Hebei statistical yearbook*)

	2015	2020	2021	2022
Annual Income	100.0%	100.0%	100.0%	100.0%
1.Wage Income	37.2%	44.5%	48.1%	49.6%
a. From Non-business organization	3.1%	3.7%	3.8%	3.5%
b. From local enterprises	13.3%	11.9%	11.8%	26.1%
c. From Working Outside	11.8%	17.9%	19.5%	19.9%
d. Others	9.0%	11.0%	13.0%	0.0%
2.Household Business Income	57.1%	45.8%	42.2%	40.3%
a. Primary Industry	41.8%	34.5%	31.3%	28.7%
b. Secondary industry	4.4%	3.6%	3.1%	3.2%
c. Tertiary industry	10.9%	7.8%	7.8%	8.4%
3. Property Income	5.7%	9.6%	9.7%	10.2%

3.4. Farmers stay poor without effective ways to relieve poverty.

Although the MSH is close to the capital, there are so many poor farmers in MSH there. Therefore, the poverty is still very serious there. As statistic dada showed, in MSH, there are about 23 of 39 poorer counties of China to be relieved. Two poorest regions located among them, one is Yanshan-Taihang Mountain, another is the Black Dragon Port poverty area. Most of farmers in the two poorest areas have no enough money to live on, the net income of farmers only 56.7% and 60.2% of the provincial average amount, and the per capita savings of the two areas are less than half of the provincial average level.

4. Conclusion

Above all, the middle and southern area of Hebei has a very important regional position. It is not only supposed as a necessary part of the coordinated development of the Beijing-Tianjin-Hebei region, but also having a large of labor resource and consumer markets for the fast developing of the Beijing-Tianjin-Hebei region as well. Analysis of the developmental situation in different cities of Hebei Province, we get to know that the economy of large and medium-sized cities developed slowly, by contrast, but the economic industries of counties, towns and villages developed more fast with increasing historical accumulation. It is supposed that small and medium-sized towns act as the important carriers in urbanization development of MSH. That is one of the typical characteristics of urbanization development there. Based on favorable natural conditions, complex road connections, more opportunities of jobs at both of urban and rural was supported by high motorization. Most of off-farm workers will get better paid from their works than only by farming. Looking back the industrial structure and present situation in MSH, we found out the characteristics of the industrial cluster of villages and towns, that is, limited customers groups, small- scale production and scattered distribution.

References

- [1] Yongbo Zhang, Li Zhu. Macro Development Trend and the Microscopic Phenomena of the County Urbanization[C]. The 15th Annual Conference of China Association for Science and Technology. 2013.05
- [2] Xiaojiang Li, Li Zhu. Research on spatial planning and rational layout of China's urbanization development[R]. Chinese Academy of Engineering "Research on the Development Strategy of Urbanization with Chinese Characteristics" consulting report.2018
- [3] Qinglu Hao, Ruixia Zhang, Research on agricultural scale management in southern Hebei Province[J]. Enterprises in Hebei. 2014.12
- [4] Yunhong Xu, Huadong Wang, Tianxiang Yao. Reseach on the transformation and upgrading of county economy in Hebei Province from the perspective of "two-oriented society" [J]. Special area economy.2017.02
- [5] Shaomin Liu, Analysis of the development status of the massive private economy in Hebei Province[J]. Commercial economic research. 2015.11